

Application No. 10/647,656

Filed: August 25, 2003

TC Art Unit: 1724

Confirmation No.: 2132

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A method for forming a vapor absorptive non-woven air filter for a semiconductor processing system comprising thermo-plastic fibers and adsorptive particles, said composite having a fiber density, comprising the steps of:

providing a non-woven carrier material having a surface and comprising thermo-plastic fibers; and

applying adsorbent particles of an acidic polymer to said surface of said carrier material to form a filter element for a semiconductor processing system.

2. (Original) The method of Claim 1 further comprising heating said carrier material and applied adsorbent particles; and

calendering the heated carrier material with said adsorbent particles distributed therein;

wherein said heating and calendering steps are performed for a period of time and under a pressure selected to be sufficient for said adsorbent particles to become retained within said heated and calendered carrier material to form a calendered composite having an open fibrous structure of said given fiber density with the surfaces of said distributed

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adsorbent particles being substantially exposed for contact with air passing through said calendered composite, said resulting non-woven air filter composite being characterized by a pressure drop sufficient for use as an air filter.

3. (Original) The method of Claim 1 wherein the acidic polymer comprises a sulfonated copolymer.
4. (Original) The method of Claim 1 wherein the acidic polymer comprises a carboxylic copolymer.
5. (Original) A method of forming a filter element comprising the steps of:
 - a) forming a layer of adsorbent powder material;
 - b) delivering binder onto selected regions of the layer of adsorbent powder material to bond the regions of adsorbent material in accordance with a programmed model; and
 - c) repeating steps (a) and (b) until a filter element matching the programmed model is formed.

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6. (Original) The method of Claim 5 wherein the binder includes an acid-polymerizable or acid-cross-linkable liquid.
7. (Currently Amended) The method of Claim 6 ~~wherein the~~ further comprising providing a powder material that includes a divinyl benzene styrene copolymer.
8. (Original) The method of Claim 5 further comprising the step of removing excess powder.
9. (New) The method of Claim 5 further comprising forming a filter element for a semiconductor processing system.
10. (New) The method of Claim 5 further comprising providing a filter including a sulfonated acidic group.
11. (New) the method of Claim 5 further comprising providing a filter including a carboxylic acid group.
12. (New) The method of Claim 1 further comprising forming a filter having a particle size of between 0.3 and 1.2 mm.

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13. (New) The method of Claim 1 further comprising forming a filter having a pore size in a range of 50-400 angstroms.
14. (New) The method of Claim 1 wherein the acidic polymer has an acidity of at least 1 milliequivalent/gram.
15. (New) The method of Claim 1 wherein the acidic polymer has a acidity of at least 4 milliequivalents/grams.
16. (New) The method of Claim 1 further comprising forming a filter element having a pleated structure.
17. (New) The method of Claim 1 further comprising forming a filter having a plurality of filter elements in series.
18. (New) The method of Claim 1 further comprising forming a filter having a second adsorbent material.
19. (New) The method of Claim 18 further comprising providing a second adsorbent material including an activated carbon.

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20. (New) The method of Claim 1 further comprising forming a filter that maintains a concentration of bases in the processing system below 2 ppb.